

ABSTRACT

A reflective cholesteric display that may be viewed under a wide range of ambient lighting conditions, ranging from complete darkness to bright sunlight. The display includes a chiral nematic liquid crystal material located between first and second substrates, an ambidextrous or bi-directional circular polarizer, a partial mirror, also referred to as a transflector, and a light source. The liquid crystal material includes focal conic and planar textures that are stable in the absence of an electric field. The ambidextrous circular polarizer is located adjacent to one of the substrates that constrain the liquid crystal material. The chiral nematic liquid crystal display may be operated in both a transmissive mode and a reflective mode.